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NASA'S Aqua Satellite Studying Snow Over the Sea of Japan

Using NASA's Earth Observing System Aqua satellite, research aircraft and coastal radars, NASA and two Japanese government agencies are currently collaborating on a study of snowfall over Wakasa Bay, Japan.

Precipitation measurements by satellite over open water are very important, because there are very few ways to currently obtain them.

Snowfall has proven a particularly difficult quantity to measure from space, even over the relatively uniform background of the ocean. But new satellite instruments that detect rainfall and snowfall over the ocean will give scientists more data to help interpret how the hydrology of the Pacific Ocean impacts the U.S. and the world.

"These experiments are critical to understanding whether the current El Niño event, for instance, actually increases the global precipitation or merely redistributes it between land and ocean regions," said Tom Wilheit, Mission Scientist from Texas A&M University.

The Wakasa Bay Field Campaign is a joint research campaign with NASA, the National Space Agency of Japan (NASDA), and the Japanese Meteorological Research Institute (MRI) and runs from January 3 through February 14, 2003.

The bay, located North of Osaka on the Sea of Japan is known for its diverse weather in winter months, ranging from cold air outbreaks that bring cold Siberian air and accompanying snow into the region, as well as fast moving extra-tropical low pressure systems that consist primarily of rain at the surface, but originating as snowfall in the clouds.



Currently, a P-3 Orion aircraft (above) from NASA Wallops Flight Facility is flying over the bay and collecting data on snowfall and rainfall to compare it to data being gathered by the Aqua satellite, which is making the same trek,

but from outer space. The aircraft payload consists of five microwave sensors, each capable of uniquely observing precipitation and cloud properties.

Onboard Aqua is an Advanced Microwave Scanning Radiometer - Earth Observing System (AMSR-E).



Artist's rendition of the Aqua satellite.

Both the aircraft and the satellite are measuring the snow and rainfall over the ocean as a double check, to ensure that measurements from both are accurate.

The Wakasa Bay experiment is designed to test if the calculations and methods that scientists use to process the satellite data are correct. That is, the P-3 Aircraft observations will be used to get precise values for the cloud and precipitation properties, such as the size distribution of the ice particles or raindrops that are currently assumed in the satellite calculations. By replacing the assumed data with precise observations from the P-3 aircraft, scientists can determine the accuracy of the Aqua AMSR-E rainfall and snowfall estimates.

NASA's Aqua satellite was launched on May 4, 2002. The Aqua mission provides a multi-disciplinary study of the Earth's atmospheric, oceanic, cryospheric, and land processes and their relationship to global change.

The AMSR-E is a Japanese-built instrument. Japan also launched its ADEOS-II satellite last month, which carries a sister AMSR instrument.

For more information and images, see: <http://www.gsfc.nasa.gov/topstory/2003/0122japansnow.html>

A Message to the NASA Family from Administrator Sean O'Keefe

The loss of the courageous crew of STS-107 and of the Space Shuttle Columbia has brought tragedy to the NASA family, to the families of these seven heroes and to our Nation.

Our thoughts and prayers are with the families of seven remarkable individuals- Rick Husband, William McCool, Mike Anderson, Dave Brown, Kalpana Chawla, Laurel Clark and Ilan Ramon. These explorers performed magnificently and with tremendous spirit on this mission to expand our scientific horizons.

The bond between those who venture into the frontier of space, and those who make spaceflight possible is incredibly strong. Accordingly, our grief is unbearably great. But so is our resolve to do everything we possibly can for the families of the Columbia crew to find out what caused this accident, and to move on to correct what problems we find and make sure this never happens again. We owe them that.

To honor the Columbia crew and the family members who have borne their



personal grief with tremendous dignity and courage, President Bush will join us for a memorial service at the Johnson Space Flight Center on Tuesday, February 4 at 12:45 p.m. EST

and will be aired on NASA TV, Wallops Channel 6.

There will also be a memorial service on Thursday, February 6 at Washington's National Cathedral at 1:00 p.m.

Our nonstop work to recover from this terrible tragedy also honors the astronauts and their families.

That work, which began the minute we realized that Columbia and its crew would not safely return home, will be NASA's chief focus in the days and weeks ahead, along with the continued safe operations of the International Space Station.

The work for the accident investigation is ongoing at many locations, and is

(continued on the back)

Centennial of Flight Milestone

70 years ago on February 8, 1933, Boeing 247 debuts as the first modern airliner.

(Message from the NASA Administrator continued)

being supported by federal, state and local government organizations who are helping us collect all the evidence. Their cooperation is greatly appreciated.

To help this work we have appointed a NASA Space Shuttle Mishap Investigation Team and an independent investigation board, which will provide an objective review of the events and activities that led up to Saturday's tragedy.

Retired U.S. Navy Admiral Harold W. Gehman, Jr., the former Commander in Chief of the U.S. Atlantic Command, who later led the independent commission that investigated the attack on the U.S.S. Cole, will chair the investigative board. The board has already held its first meeting at Barksdale Air Force Base in Louisiana.

In the horrible hours after the loss of Columbia, I saw countless examples of NASA employees pulling together and doing their jobs with the professionalism that the American public expects from this storied agency. And the President has asked me to pass along his appreciation and admiration for the professionalism being displayed by the entire NASA family.

As all of us strive to leave no stone unturned in the accident investigation and recovery efforts, let us also remember our responsibilities to take care of our fellow NASA family members. Our dedicated Employee Assistance professionals are on hand to help should anyone need emotional support in the days ahead. Please feel comfortable in asking for their services if the need arises.

As we search for solace in this challenging time, I have found comfort in the following verse of the Navy Hymn that was written especially for our astronauts:

Eternal Father, King of birth, Who didst create the heaven and earth, And bid the planets and the sun Their own appointed orbits run; O hear us when we seek thy grace For those who soar through outer space.

May God bless the crew of STS-107, their families, and the members of the NASA family.

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Editor's Note: Columbia debris also will be collected at the National Scientific Balloon Facility (NSBF) in Palestine, Texas. NSBF is a NASA facility managed by the Physical Science Laboratory, New Mexico State University. The contract for the facility is administered by the Wallops Flight Facility's Balloon Program Office.

Wallops Shorts
Sounding Rocket Launches

A NASA Terrier-Black Brant sounding rocket was launched from the Poker Flat Research Range, Alaska, on January 28. The objective of this flight is to measure high frequency wave signals with spaced antennas while flying through auroral arcs at altitudes where standing waves form. Dr. James LaBelle, Dartmouth College, is the principal investigator. Bill Payne, NSROC, is the payload manager.

The second NASA Terrier-Orion sounding rocket in the MacWAVE series to study the upward propagation and penetration of mountain waves from Northern Norway into the mesosphere was launched from Esrange, Sweden, on January 28. Preliminary indications are that good data was obtained. Dr. Richard Goldberg, NASA Goddard Space Flight Center is the principal investigator. Rick Weaver, NSROC, is the payload manager.

On the road

Rich Rogers, NASA Aircraft Office, visited a second grade class at Salisbury Christian School on January 31. He talked about NASA, Wallops, airplanes and the planets in our solar system.

Ed Parrott, Teacher-on-Loan, conducted a science teacher workshop for the Wicomico County Board of Education on January 31.

Public Comment Period for
Proposed Soil Excavation
on Wallops Island

NASA plans to excavate soil contaminated with polynuclear aromatic hydrocarbons (PAHs) at the Paint Stain (Site 5) and the Former Wind Tunnel (Site 12) located on Wallops Island in February 2003. The community is invited to comment on the proposed excavation during the public comment period that ends on Friday, February 7, 2003.

Details about the soil excavation are described in the Remedial Investigation/ Feasibility Study (RI/FS), the Work Plan, and the Action Memorandum. These documents are available for review at the following locations:

Sue Fields Office
Building N-161, Room 119

Eastern Shore Public Library
23610 Front Street
Accomac, VA

Island Library
4077 Main Street
Chincoteague, VA

Questions and comments about this proposed action or other environmental restoration concerns should be directed to the Wallops Environmental Restoration Program Manager, Sue Fields on x1327.



James Mason-Foley

Per Presidential Proclamation, flags are to be flown at half-staff through Wednesday, February 5, as a mark of respect for the seven astronauts who gave their lives during the STS-107 mission aboard Space Shuttle Columbia.

Why is February Black History Month?

Black History Month is an annual observance, in February, of the past achievements and current status of African Americans. It coincides with the birthdays of the great black leader Frederick Douglass (February 14) and of Abraham Lincoln (February 12).

The idea for an observance honoring the accomplishments of African Americans led to the establishment of Negro History Week in 1926. It was proposed by Dr. Carter Woodson, a black historian known as the Father of Black History, and others. The observance became known as Black History Week during the early 1970's and was established as Black History Month in 1976.

However, February has much more than Douglass and Lincoln to show for its significance in black American history. For example:

February 23, 1868: William Edward Burghardt Du Bois, important civil rights leader and co-founder of the National Association for the Advancement of Colored People (NAACP), was born.

February 3, 1870: The 15th Amendment was passed; granting blacks the right to vote.

February 25, 1870: The first black U.S. senator, Hiram R. Revels (1822-1901), took his oath of office.

February 12, 1909: The NAACP was founded by a group of concerned black and white citizens in New York City.

February 1, 1960: In what would become a civil-rights movement milestone, a group of black Greensboro, N.C., college students began a sit-in at a segregated Woolworth's lunch counter.

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